

APPLICATION CERTIFICATION  
On Behalf of  
Bedford, Freeman & Worth Publishing Group, LLC

IOLab Dongle  
Model No.: IOL15B

FCC ID: 2AF5F-IOL15B

Prepared for : Bedford, Freeman & Worth Publishing Group, LLC  
Address : 175 Fifth Avenue, New York, NY 10010 United States

Prepared by : ACCURATE TECHNOLOGY CO., LTD  
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Report Number : ATE20152072  
Date of Test : September 24, 2015  
Date of Report : October 8, 2015

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## Test Report Certification

Applicant : Bedford, Freeman & Worth Publishing Group, LLC  
Manufacturer : Shenzhen C&D Electronics Co., Ltd  
EUT Description : IOLab Dongle  
(A) Model No.: IOL15B  
(B) Trade Mark: Macmillan  
(C) Power Supply: DC 5V

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.249: 2015**  
**ANSI C63.10: 2013**

The EUT was tested according to FCC 47CFR 15.249 for compliance to FCC 47CFR 15.249 requirements

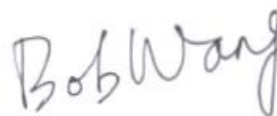
The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : September 24, 2015

Date of Report: October 8, 2015

Prepared by :



(Bob Wang, Engineer)

Approved & Authorized Signer :



(Sean Lu, Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

|                            |                                                                                                                                                   |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT                        | : IOLab Dongle                                                                                                                                    |
| Model Number               | : IOL15B                                                                                                                                          |
| Trade Mark                 | : Macmillan                                                                                                                                       |
| Power Supply               | : DC 5V (Power by USB port)                                                                                                                       |
| Modulation:                | : GFSK                                                                                                                                            |
| Frequency Range            | : 2.402-2.480GHz                                                                                                                                  |
| Number of Channels         | : 79                                                                                                                                              |
| Type of Antenna            | : PCB Antenna                                                                                                                                     |
| Max antenna gain           | : 0dBi                                                                                                                                            |
| Applicant                  | : Bedford, Freeman & Worth Publishing Group, LLC                                                                                                  |
| Address                    | : 175 Fifth Avenue, New York, NY 10010 United States                                                                                              |
| Manufacturer               | : Shenzhen C&D Electronics Co., Ltd                                                                                                               |
| Address                    | : The 9 <sup>th</sup> floor of 9 <sup>th</sup> A Building Baoneng technology park,<br>Longhua Town, BaoAn District, ShenZhen, Guangdong,<br>China |
| Date of sample<br>received | : September 21, 2015                                                                                                                              |
| Date of Test               | : September 24, 2015                                                                                                                              |

### 1.2. Special Accessory and Auxiliary Equipment

N/A

### 1.3. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC  
The Registration Number is 752051

Listed by Industry Canada  
The Registration Number is 5077A-2

Accredited by China National Accreditation Committee  
for Laboratories  
The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.  
Science & Industry Park, Nanshan, Shenzhen, Guangdong  
P.R. China

### 1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2  
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2  
(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2  
(Above 1GHz)

## 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment**

| Kind of equipment  | Manufacturer              | Type                                    | S/N        | Calibrated dates | Calibrated until |
|--------------------|---------------------------|-----------------------------------------|------------|------------------|------------------|
| EMI Test Receiver  | Rohde&Schwarz             | ESCS30                                  | 100307     | Jan. 11, 2015    | Jan. 10, 2016    |
| EMI Test Receiver  | Rohde&Schwarz             | ESPI3                                   | 101526/003 | Jan. 11, 2015    | Jan. 10, 2016    |
| Spectrum Analyzer  | Agilent                   | E7405A                                  | MY45115511 | Jan. 11, 2015    | Jan. 10, 2016    |
| Pre-Amplifier      | Rohde&Schwarz             | CBLU118354<br>0-01                      | 3791       | Jan. 11, 2015    | Jan. 10, 2016    |
| Loop Antenna       | Schwarzbeck               | FMZB1516                                | 1516131    | Jan. 15, 2015    | Jan. 14, 2016    |
| Bilog Antenna      | Schwarzbeck               | VULB9163                                | 9163-323   | Jan. 15, 2015    | Jan. 14, 2016    |
| Horn Antenna       | Schwarzbeck               | BBHA9120D                               | 9120D-655  | Jan. 15, 2015    | Jan. 14, 2016    |
| Horn Antenna       | Schwarzbeck               | BBHA9170                                | 9170-359   | Jan. 15, 2015    | Jan. 14, 2016    |
| LISN               | Rohde&Schwarz             | ESH3-Z5                                 | 100305     | Jan. 11, 2015    | Jan. 10, 2016    |
| LISN               | Schwarzbeck               | NSLK8126                                | 8126431    | Jan. 11, 2015    | Jan. 10, 2016    |
| Highpass Filter    | Wainwright<br>Instruments | WHKX3.6/18<br>G-10SS                    | N/A        | Jan. 11, 2015    | Jan. 10, 2016    |
| Band Reject Filter | Wainwright<br>Instruments | WRCG2400/2<br>485-2375/2510<br>-60/11SS | N/A        | Jan. 11, 2015    | Jan. 10, 2016    |

### 3. OPERATION OF EUT DURING TESTING

#### 3.1.Operating Mode

The mode is used: **Transmitting mode**

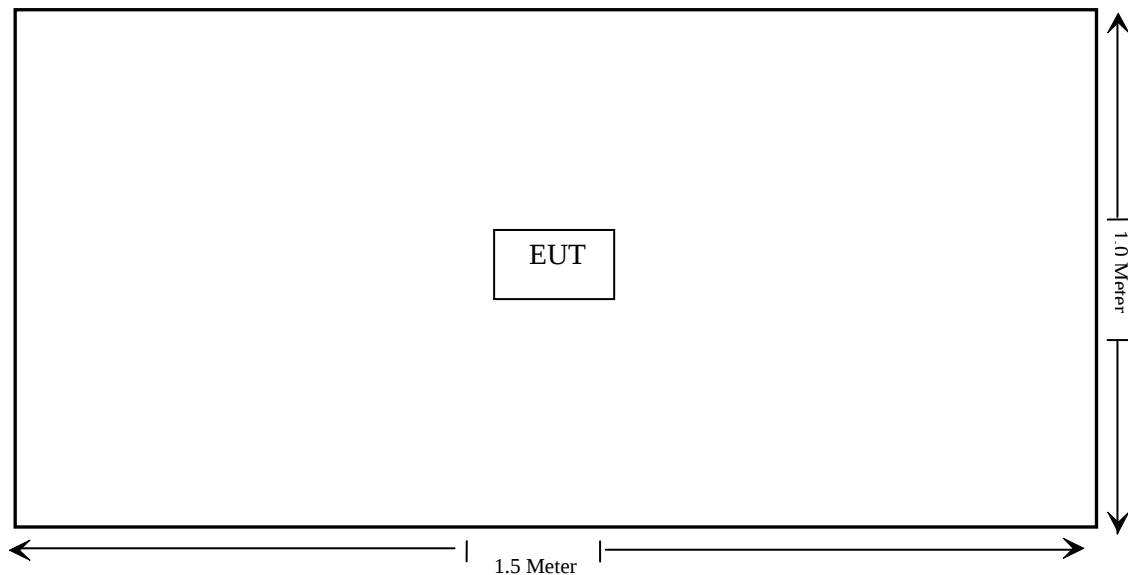
Low Channel: 2402MHz

Middle Channel: 2450MHz

High Channel: 2480MHz

#### 3.2.Configuration and peripherals

Block Diagram of Test Setup



#### 4. TEST PROCEDURES AND RESULTS

| FCC Rules                                                                    | Description of Test                   | Result    |
|------------------------------------------------------------------------------|---------------------------------------|-----------|
| Section 15.215(c)                                                            | 20dB Bandwidth                        | Compliant |
| Section 15.249(d)                                                            | Band Edge Compliance Test             | Compliant |
| Section 15.205(a),<br>Section 15.209(a),<br>Section 15.249,<br>Section 15.35 | Radiated Spurious Emission Test       | Compliant |
| Section 15.207                                                               | AC Power Line Conducted Emission Test | Compliant |
| Section 15.203                                                               | Antenna Requirement                   | Compliant |

## 5. 20DB BANDWIDTH MEASUREMENT

### 5.1. Block Diagram of Test Setup



### 5.2. The Requirement For Section 15.215(c)

The bandwidth of a frequency hopping channel is the 20 dB emission bandwidth, measured with the hopping stopped. The system RF bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset while the long-term distribution appears evenly distributed.

### 5.3. Operating Condition of EUT

5.3.1. Setup the EUT and simulator as shown as Section 5.1.

5.3.2. Turn on the power of all equipment.

5.3.3. Let the EUT work in TX modes measure it. The transmit frequency is 2402, 2450, 2480MHz.

### 5.4. Test Procedure

5.4.1. Place the EUT on the table and set it in transmitting mode.

5.4.2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

5.4.3. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz, Detector function=peak, Trace=max hold, Sweep=auto.

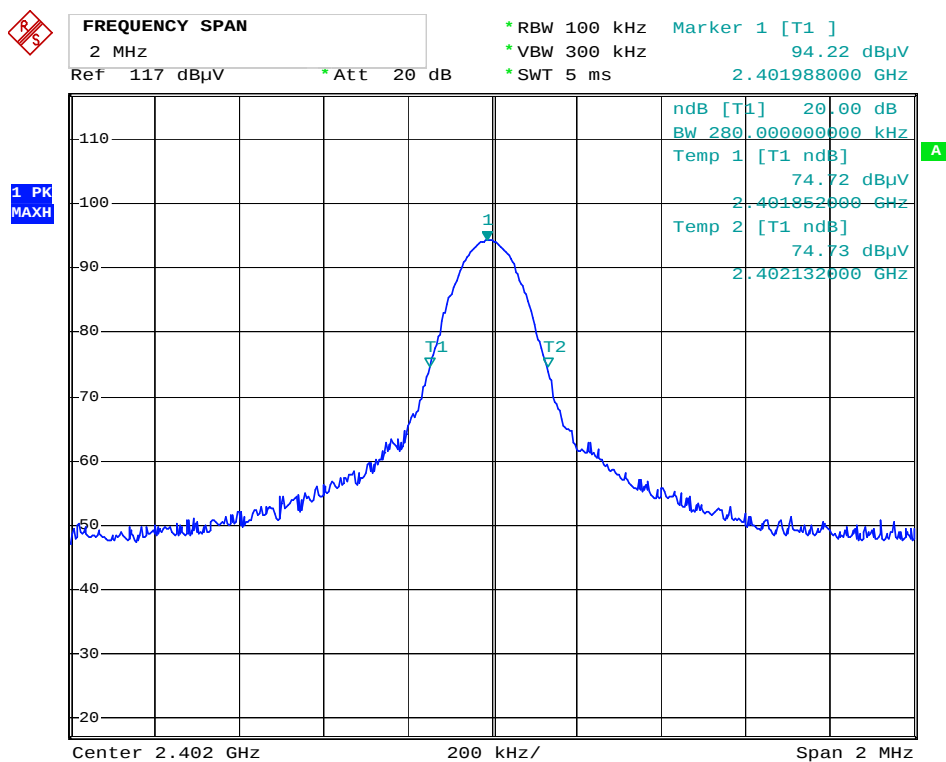
5.4.4. Set the measured low, middle and high frequency and test 20dB bandwidth with spectrum analyzer.

## 5.5. Test Result

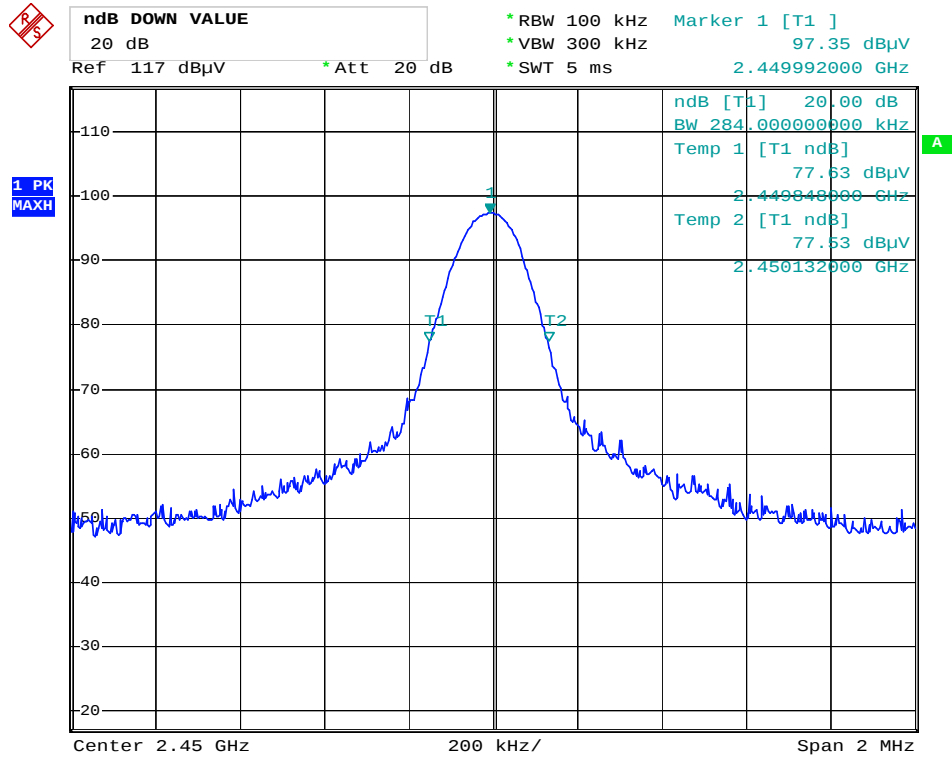
| Channel | Frequency (MHz) | 20 dB Bandwidth (MHz) |
|---------|-----------------|-----------------------|
| Low     | 2402            | 0.28                  |
| Mid     | 2450            | 0.28                  |
| High    | 2480            | 0.29                  |

The spectrum analyzer plots are attached as below.

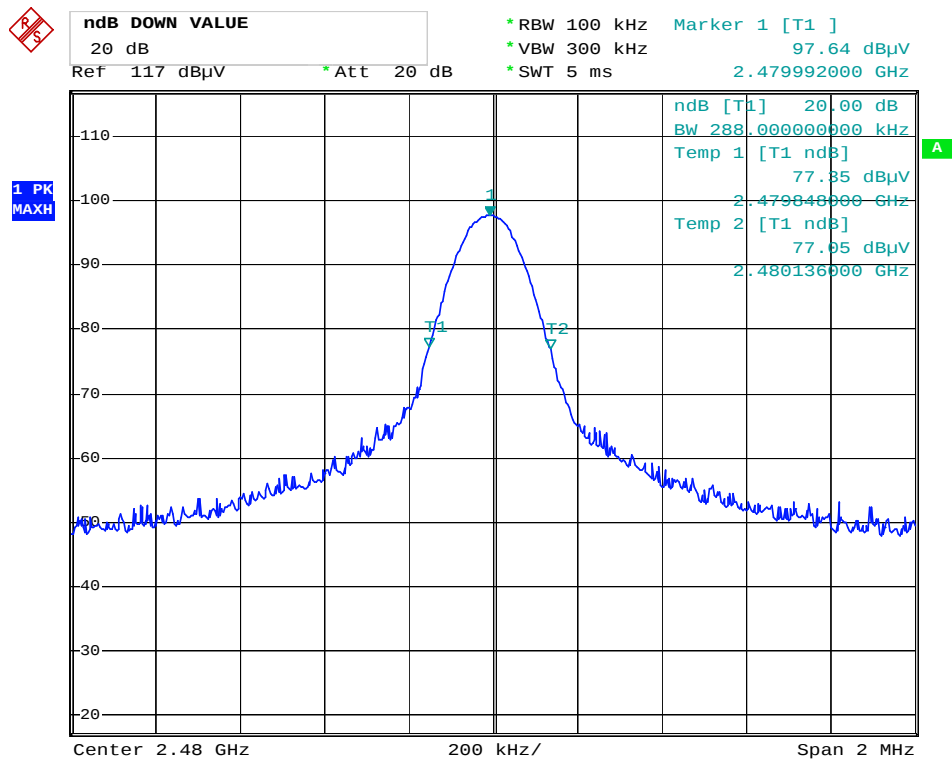
### Low channel



## Middle channel



## High channel



## 6. BAND EDGE COMPLIANCE TEST

### 6.1. Block Diagram of Test Setup



### 6.2. The Requirement For Section 15.249

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 6.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX modes measure it. The transmit frequency is 2402, 2480 MHz.

### 6.5. Test Procedure

Conducted Band Edge:

6.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

6.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

Radiated Band Edge:

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any) from the measured reading.

The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX modes then measure it.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
3. All modes of operation were investigated and the worst-case emissions are reported.

## 6.6. Test Result

**Pass**

## Radiated Band Edge Result



### ACCURATE TECHNOLOGY CO., LTD.

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

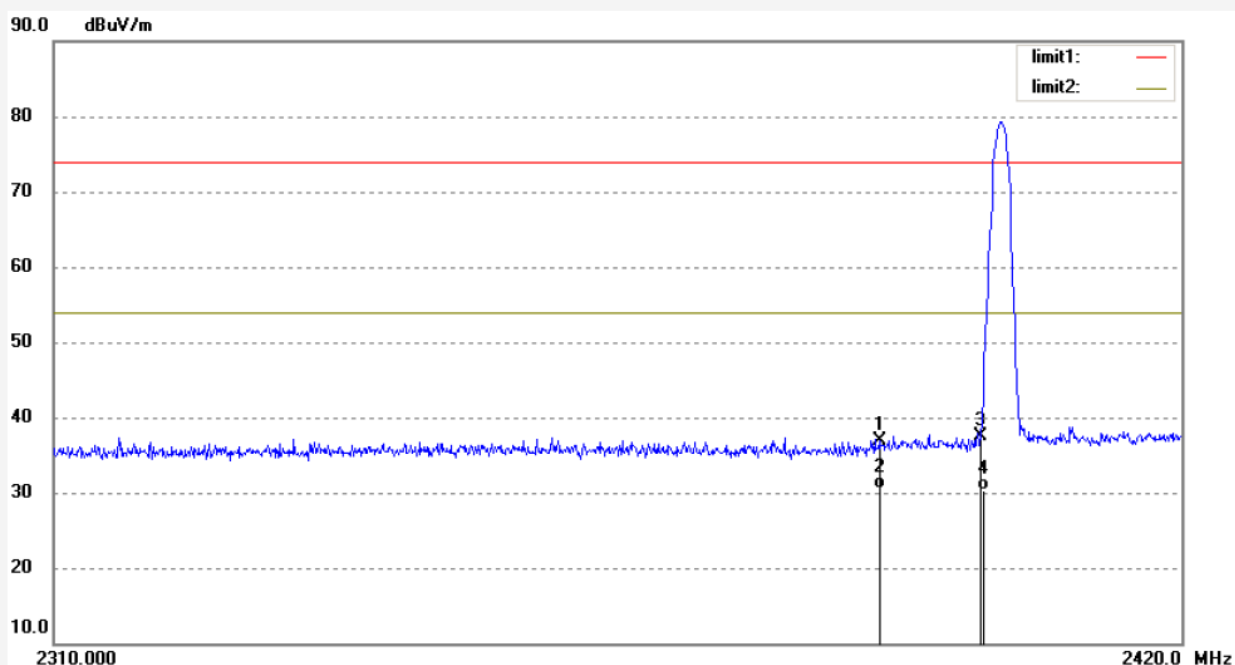
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #174  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 23 C / 48 %  
EUT: IOLab Dongle  
Mode: TX 2402MHz  
Model: IOL15B  
Manufacturer: C&D

Polarization: Horizontal  
Power Source: DC 5V  
Date: 15/09/24/  
Time: 16/56/30  
Engineer Signature: Ricky  
Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 44.88            | -7.96       | 36.92           | 74.00          | -37.08      | peak     |             |               |        |
| 2   | 2390.000    | 38.54            | -7.96       | 30.58           | 54.00          | -23.42      | AVG      |             |               |        |
| 3   | 2400.000    | 45.50            | -7.93       | 37.57           | 74.00          | -36.43      | peak     |             |               |        |
| 4   | 2400.000    | 38.22            | -7.93       | 30.29           | 54.00          | -23.71      | AVG      |             |               |        |



## ACCURATE TECHNOLOGY CO., LTD.

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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #173

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2402MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Vertical

Power Source: DC 5V

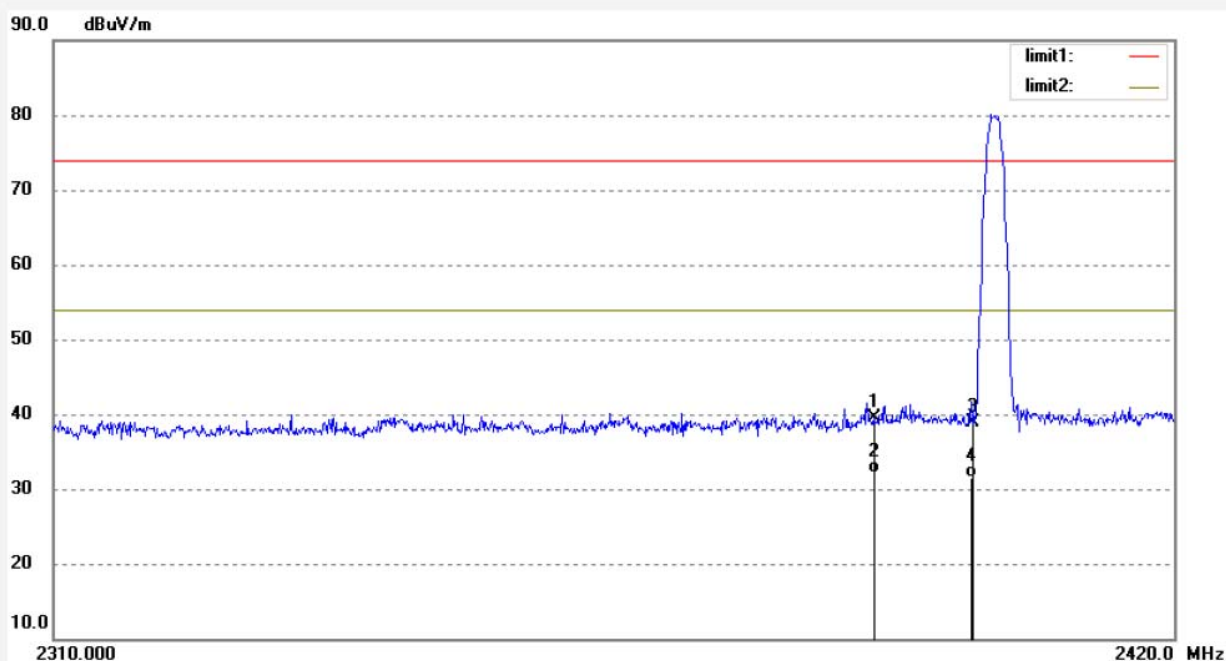
Date: 15/09/24/

Time: 16/54/18

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2390.000    | 47.37            | -7.96       | 39.41           | 74.00          | -34.59      | peak     |             |               |        |
| 2   | 2390.000    | 40.12            | -7.96       | 32.16           | 54.00          | -21.84      | AVG      |             |               |        |
| 3   | 2400.000    | 46.77            | -7.93       | 38.84           | 74.00          | -35.16      | peak     |             |               |        |
| 4   | 2400.000    | 39.52            | -7.93       | 31.59           | 54.00          | -22.41      | AVG      |             |               |        |



## ACCURATE TECHNOLOGY CO., LTD.

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #172

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2480MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Horizontal

Power Source: DC 5V

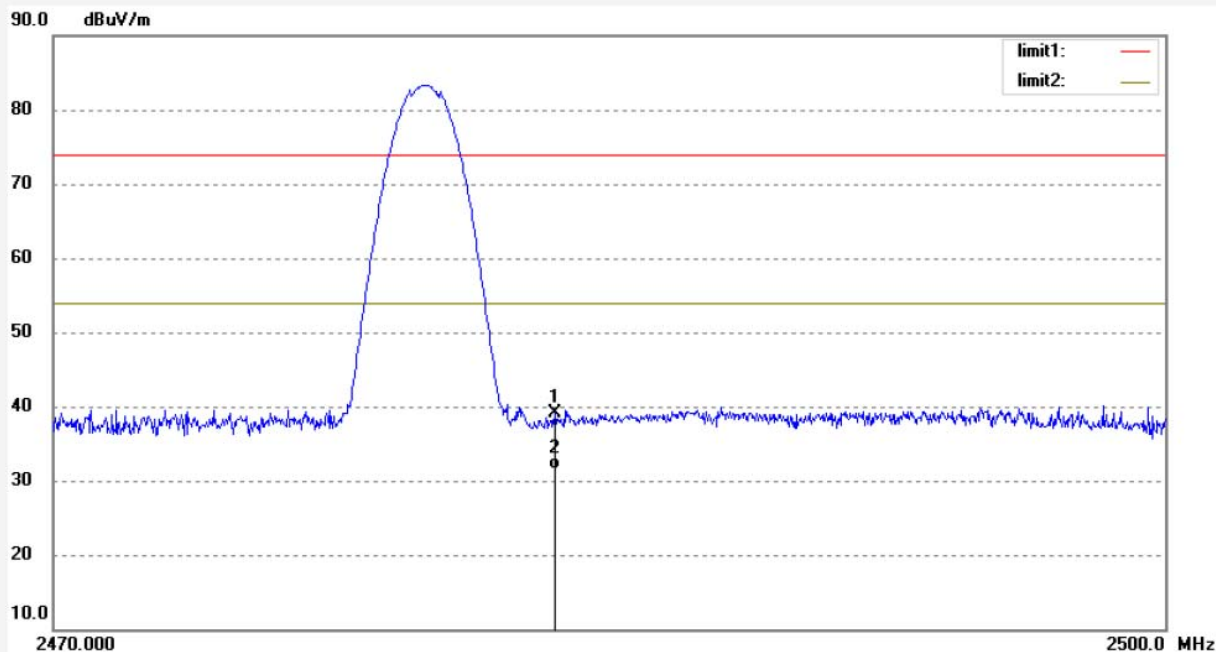
Date: 15/09/24/

Time: 16/52/50

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 46.94            | -7.75       | 39.19           | 74.00          | -34.81      | peak     |             |               |        |
| 2   | 2483.500    | 39.21            | -7.75       | 31.46           | 54.00          | -22.54      | AVG      |             |               |        |



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #171

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2480MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Vertical

Power Source: DC 5V

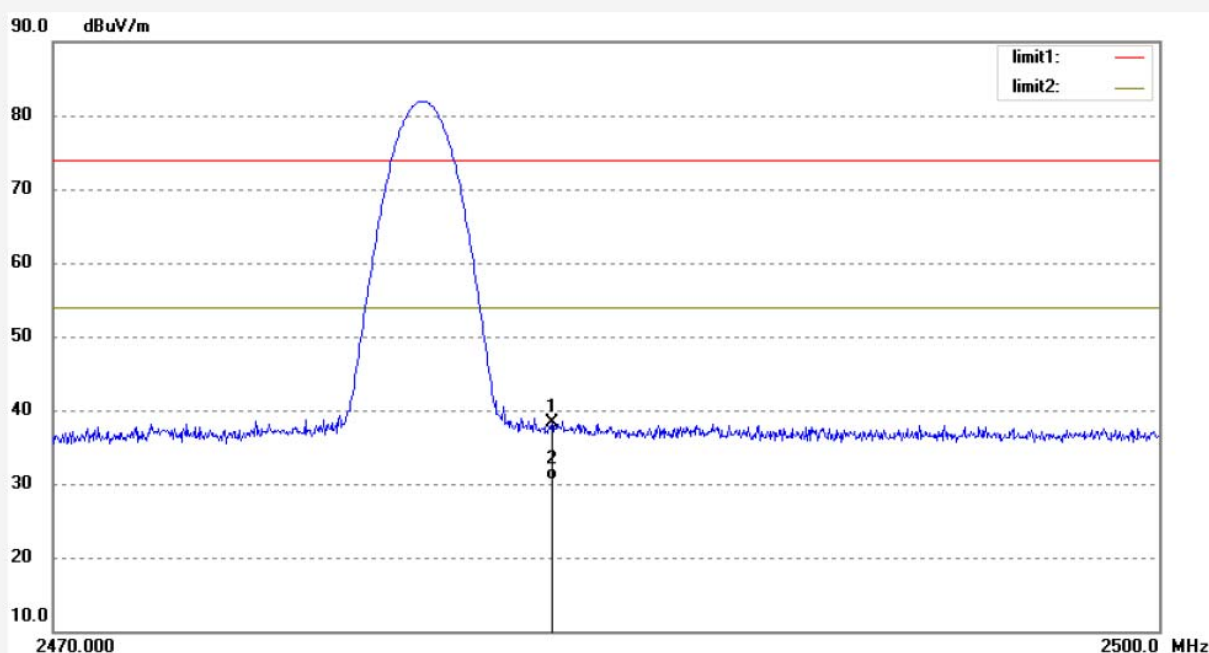
Date: 15/09/24/

Time: 16/51/21

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072

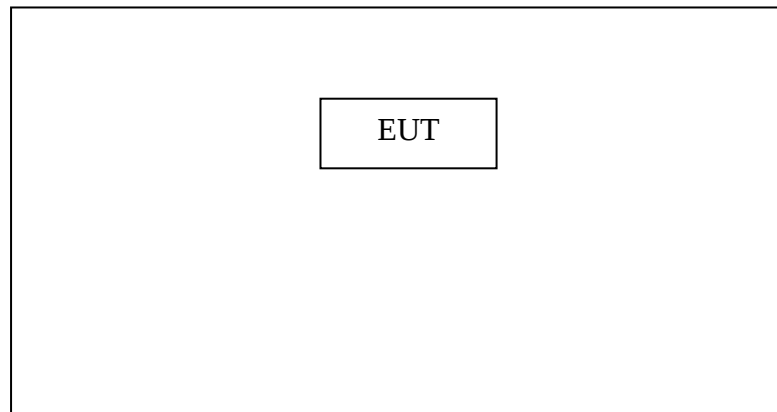


| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2483.500    | 45.96            | -7.75       | 38.21           | 74.00          | -35.79      | peak     |             |               |        |
| 2   | 2483.500    | 38.25            | -7.75       | 30.50           | 54.00          | -23.50      | AVG      |             |               |        |

## 7. RADIATED SPURIOUS EMISSION TEST

### 7.1. Block Diagram of Test Setup

#### 7.1.1. Block diagram of connection between the EUT and peripherals



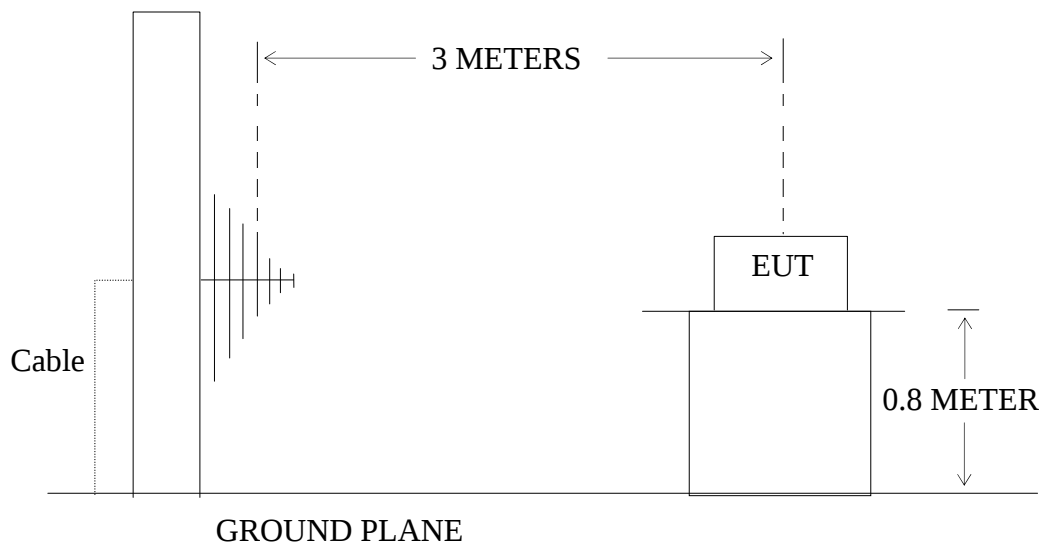
Setup: Transmitting mode

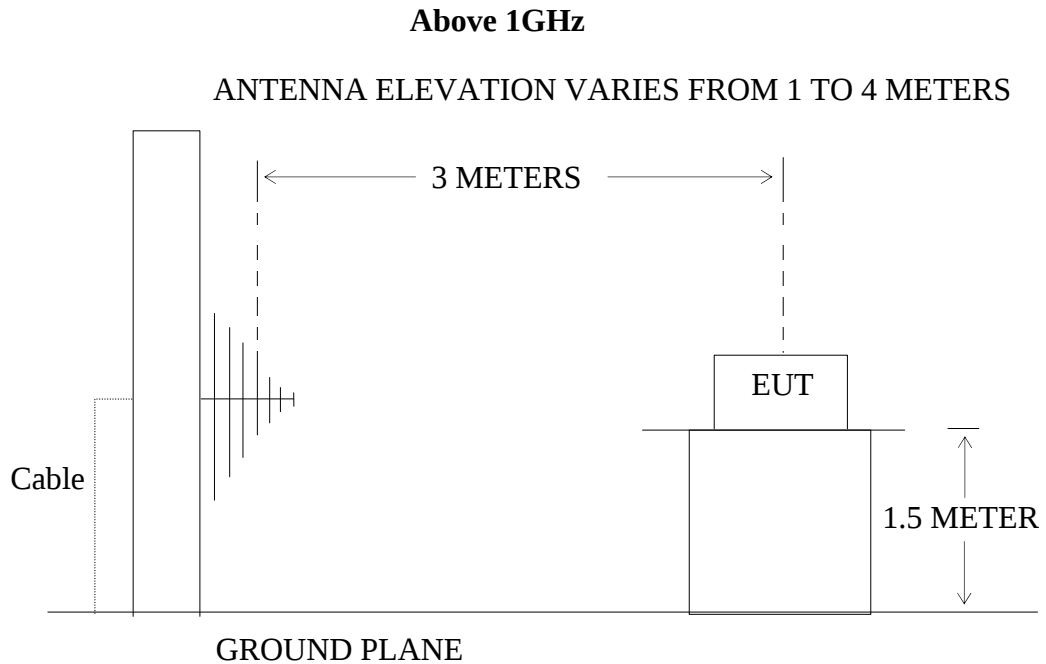
(EUT: IOLab Dongle)

#### 7.1.2. Semi-Anechoic Chamber Test Setup Diagram

**Below 1GHz**

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS





## 7.2.The Limit For Section 15.249

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph A8.4(4), the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 7.3.Restricted bands of operation

#### 7.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz                      | MHz                 | MHz           | GHz              |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110              | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
| <sup>1</sup> 0.495-0.505 | 16.69475-16.69525   | 608-614       | 5.35-5.46        |
| 2.1735-2.1905            | 16.80425-16.80475   | 960-1240      | 7.25-7.75        |
| 4.125-4.128              | 25.5-25.67          | 1300-1427     | 8.025-8.5        |
| 4.17725-4.17775          | 37.5-38.25          | 1435-1626.5   | 9.0-9.2          |
| 4.20725-4.20775          | 73-74.6             | 1645.5-1646.5 | 9.3-9.5          |
| 6.215-6.218              | 74.8-75.2           | 1660-1710     | 10.6-12.7        |
| 6.26775-6.26825          | 108-121.94          | 1718.8-1722.2 | 13.25-13.4       |
| 6.31175-6.31225          | 123-138             | 2200-2300     | 14.47-14.5       |
| 8.291-8.294              | 149.9-150.05        | 2310-2390     | 15.35-16.2       |
| 8.362-8.366              | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4        |
| 8.37625-8.38675          | 156.7-156.9         | 2690-2900     | 22.01-23.12      |
| 8.41425-8.41475          | 162.0125-167.17     | 3260-3267     | 23.6-24.0        |
| 12.29-12.293             | 167.72-173.2        | 3332-3339     | 31.2-31.8        |
| 12.51975-12.52025        | 240-285             | 3345.8-3358   | 36.43-36.5       |
| 12.57675-12.57725        | 322-335.4           | 3600-4400     | ( <sup>2</sup> ) |
| 13.36-13.41              |                     |               |                  |

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

<sup>2</sup>Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

### 7.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 7.5.Operating Condition of EUT

7.5.1.Setup the EUT and simulator as shown as Section 7.1.

7.5.2.Turn on the power of all equipment.

7.5.3.Let the EUT work in TX modes measure it. The transmit frequency is 2402, 2450, 2480MHz.

## 7.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground (Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground (Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The frequency range from 30MHz to 25000MHz is checked.

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

## 7.7.The Field Strength of Radiation Emission Measurement Results

### PASS.

#### For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

| Frequency<br>(MHz) | Reading<br>(dBμV/m) | Factor<br>Corr.<br>(dB) | Result<br>(dBμV/m) | Limit<br>(dBμV/m) | Margin<br>(dB) | Polarization |
|--------------------|---------------------|-------------------------|--------------------|-------------------|----------------|--------------|
|                    | QP                  |                         | QP                 | QP                | QP             |              |
| ---                | ---                 | ---                     | ---                | ---               | ---            | Vertical     |
| ---                | ---                 | ---                     | ---                | ---               | ---            | Vertical     |
| ---                | ---                 | ---                     | ---                | ---               | ---            | Vertical     |
| ---                | ---                 | ---                     | ---                | ---               | ---            | Horizontal   |
| ---                | ---                 | ---                     | ---                | ---               | ---            | Horizontal   |
| ---                | ---                 | ---                     | ---                | ---               | ---            | Horizontal   |

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

| Frequency<br>(MHz) | Reading(dBμV/m) |      | Factor<br>Corr. (dB) | Result(dBμV/m) |      | Limit(dBμV/m) |      | Margin(dBμV/m) |      | Polarization |
|--------------------|-----------------|------|----------------------|----------------|------|---------------|------|----------------|------|--------------|
|                    | AV              | PEAK |                      | AV             | PEAK | AV            | PEAK | AV             | PEAK |              |
| -                  | -               | -    | -                    | -              | -    | -             | -    | -              | -    | Vertical     |
| -                  | -               | -    | -                    | -              | -    | -             | -    | -              | -    | Horizontal   |

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. \*: Denotes restricted band of operation.

3. The EUT is tested radiation emission at Low, Middle, High channel in three axes. The worst emissions are reported in all channels.

4. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB.



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Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky 2015 #834

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: IOLab Dongle

Mode: TX 2402MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Vertical

Power Source: DC 5V

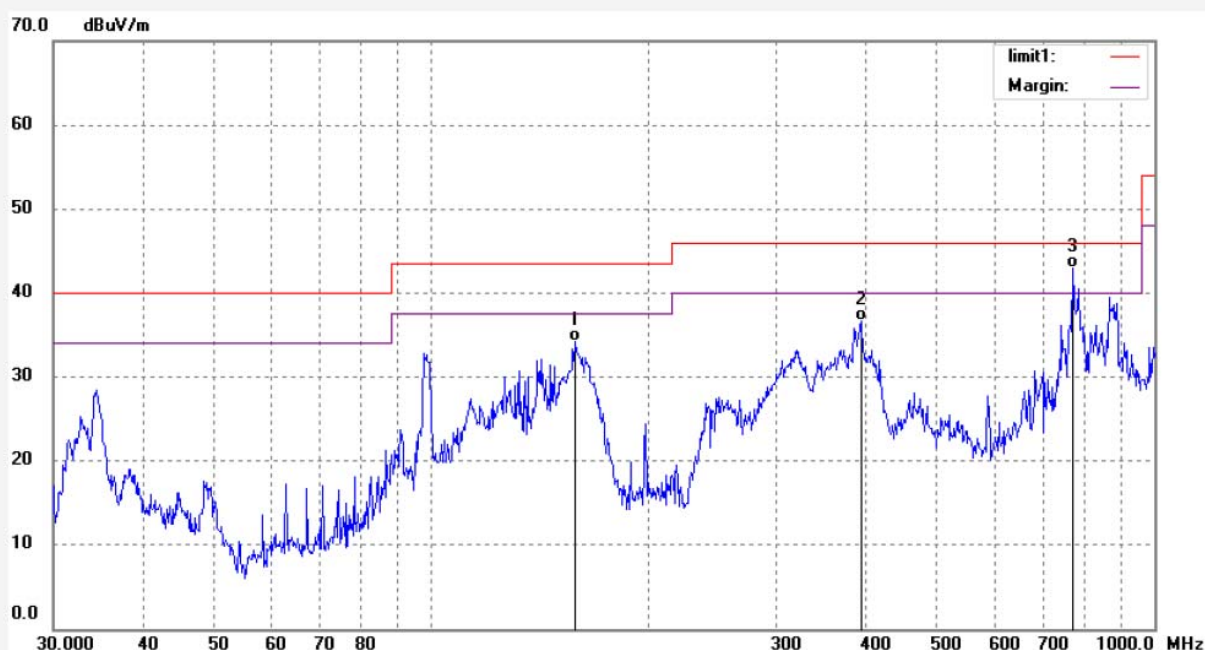
Date: 15/09/24/

Time: 8/40/13

Engineer Signature: Ricky

Distance: 3m

Note: Report No.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 158.0835    | 55.74            | -21.56      | 34.18           | 43.50          | -9.32       | QP       |             |               |        |
| 2   | 392.7376    | 50.73            | -14.05      | 36.68           | 46.00          | -9.32       | QP       |             |               |        |
| 3   | 771.0475    | 49.39            | -6.39       | 43.00           | 46.00          | -3.00       | QP       |             |               |        |



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Site: 1# Chamber

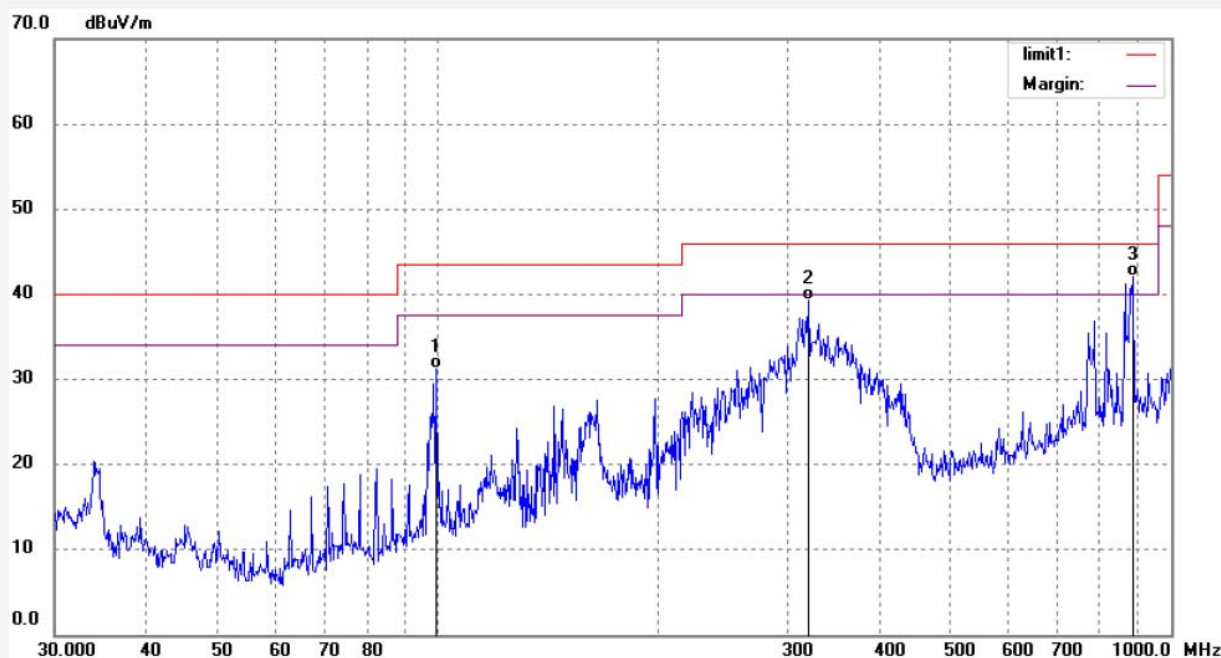
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky 2015 #835  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: IOLab Dongle  
Mode: TX 2402MHz  
Model: IOL15B  
Manufacturer: C&D

Polarization: Horizontal  
Power Source: DC 5V  
Date: 15/09/24/  
Time: 8/41/55  
Engineer Signature: Ricky  
Distance: 3m

Note: Report No.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 99.4177     | 52.91            | -21.67      | 31.24           | 43.50          | -12.26      | QP       |             |               |        |
| 2   | 320.3306    | 55.10            | -15.78      | 39.32           | 46.00          | -6.68       | QP       |             |               |        |
| 3   | 887.3978    | 46.46            | -4.39       | 42.07           | 46.00          | -3.93       | QP       |             |               |        |



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Site: 1# Chamber

Tel:+86-0755-26503290

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Job No.: ricky 2015 #836

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: IOLab Dongle

Mode: TX 2450MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Horizontal

Power Source: DC 5V

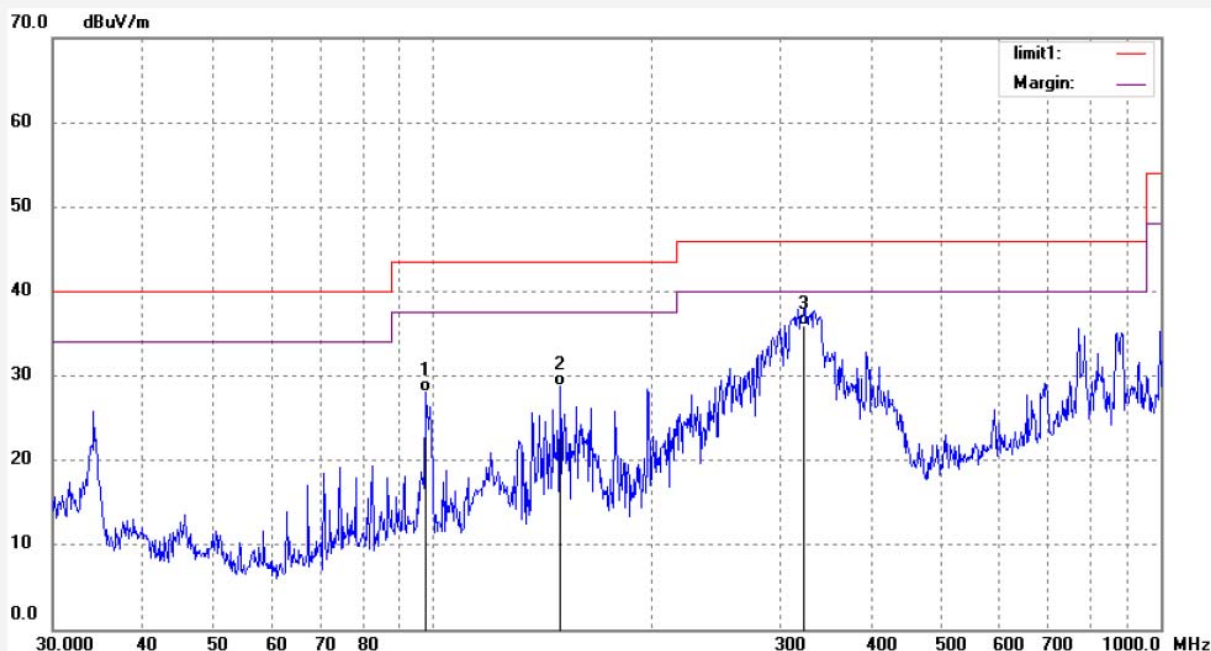
Date: 15/09/24/

Time: 8/43/22

Engineer Signature: Ricky

Distance: 3m

Note: Report No.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 97.6864     | 49.69            | -21.59      | 28.10           | 43.50          | -15.40      | QP       |             |               |        |
| 2   | 149.4416    | 51.05            | -22.30      | 28.75           | 43.50          | -14.75      | QP       |             |               |        |
| 3   | 323.7250    | 51.61            | -15.64      | 35.97           | 46.00          | -10.03      | QP       |             |               |        |



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Site: 1# Chamber

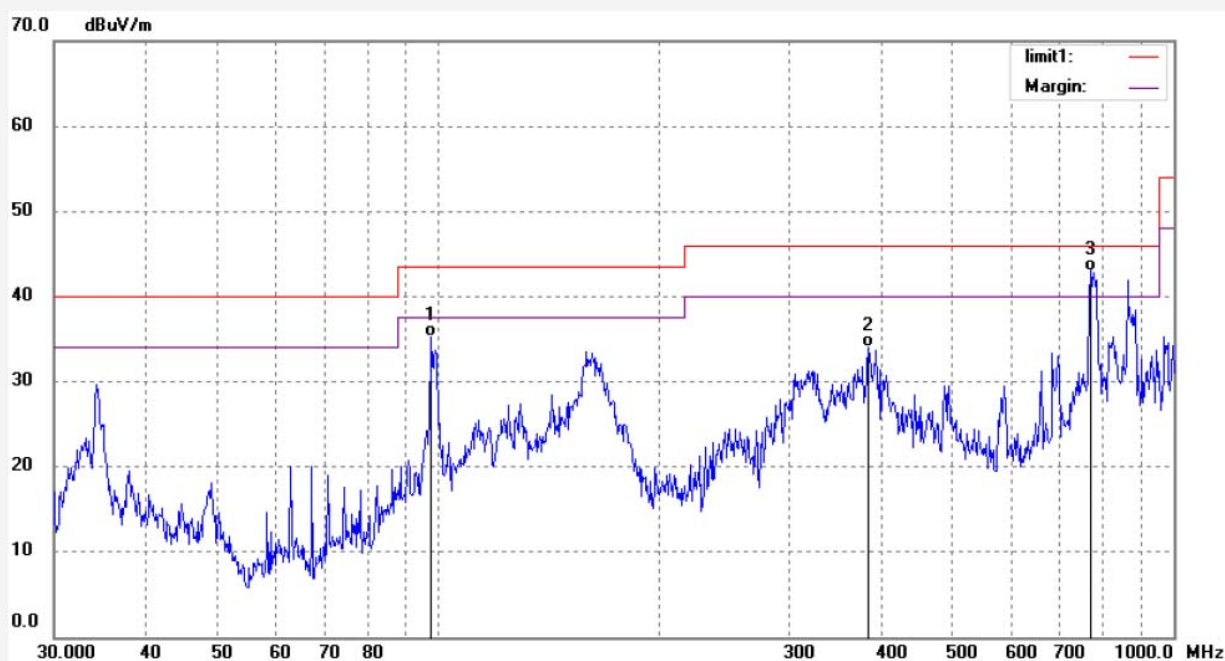
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky 2015 #837  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: IOLab Dongle  
Mode: TX 2450MHz  
Model: IOL15B  
Manufacturer: C&D

Polarization: Vertical  
Power Source: DC 5V  
Date: 15/09/24/  
Time: 8/44/29  
Engineer Signature: Ricky  
Distance: 3m

Note: Report No.:ATE20152072



| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 97.6864        | 56.88               | -21.59         | 35.29              | 43.50             | -8.21          | QP       |                |                  |        |
| 2   | 384.5447       | 48.17               | -14.13         | 34.04              | 46.00             | -11.96         | QP       |                |                  |        |
| 3   | 771.0475       | 49.34               | -6.39          | 42.95              | 46.00             | -3.05          | QP       |                |                  |        |



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Site: 1# Chamber

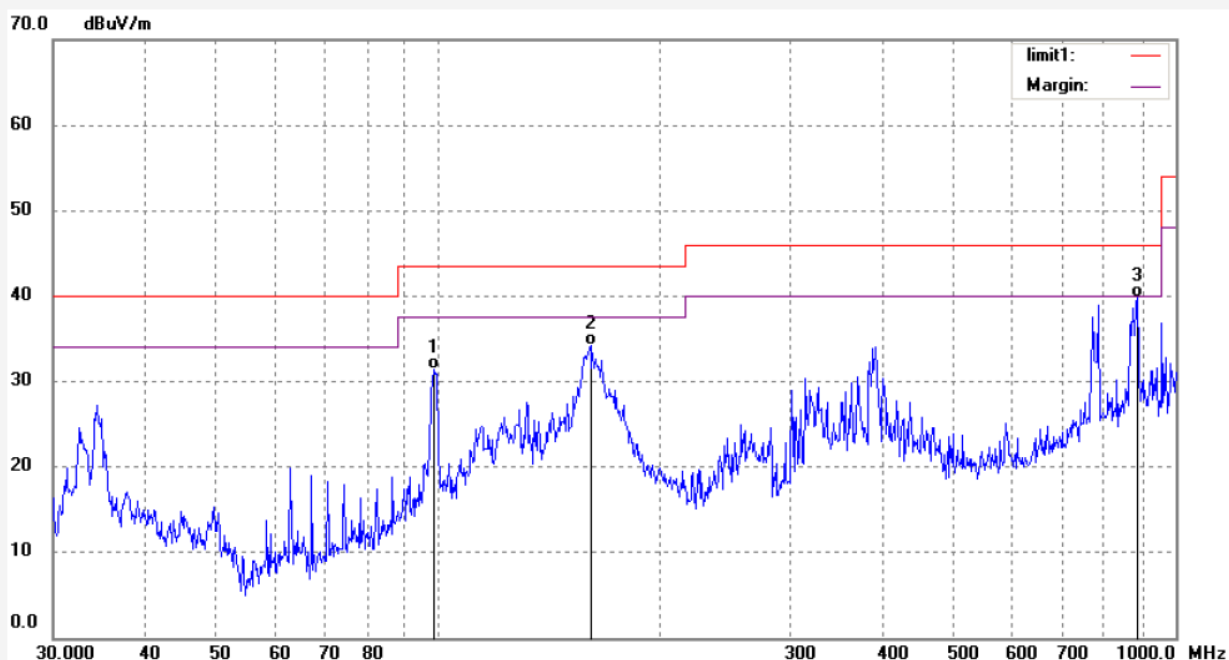
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky 2015 #838  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: IOLab Dongle  
Mode: TX 2480MHz  
Model: IOL15B  
Manufacturer: C&D

Polarization: Vertical  
Power Source: DC 5V  
Date: 15/09/24/  
Time: 8/45/35  
Engineer Signature: Ricky  
Distance: 3m

Note: Report No.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 98.7215     | 53.02            | -21.64      | 31.38           | 43.50          | -12.12      | QP       |             |               |        |
| 2   | 160.8852    | 55.48            | -21.25      | 34.23           | 43.50          | -9.27       | QP       |             |               |        |
| 3   | 887.3978    | 44.21            | -4.39       | 39.82           | 46.00          | -6.18       | QP       |             |               |        |



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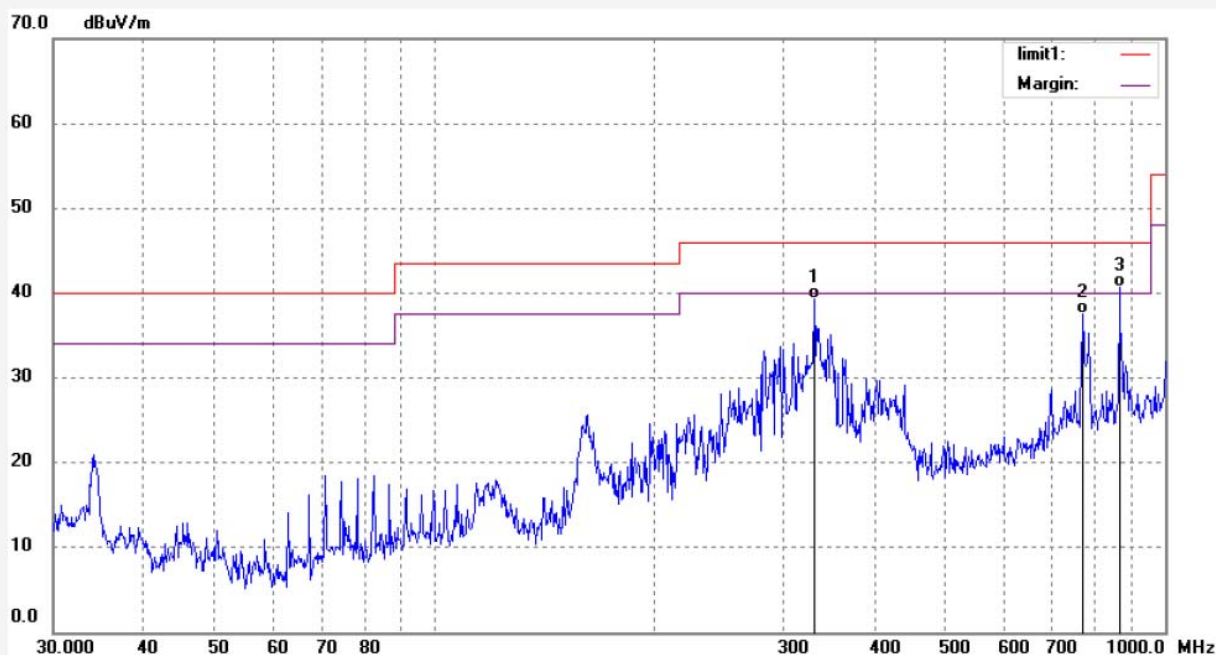
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky 2015 #839  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: IOLab Dongle  
Mode: TX 2480MHz  
Model: IOL15B  
Manufacturer: C&D

Polarization: Horizontal  
Power Source: DC 5V  
Date: 15/09/24/  
Time: 8/46/34  
Engineer Signature: Ricky  
Distance: 3m

Note: Report No.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 330.6220    | 54.70            | -15.34      | 39.36           | 46.00          | -6.64       | QP       |             |               |        |
| 2   | 771.0475    | 43.89            | -6.39       | 37.50           | 46.00          | -8.50       | QP       |             |               |        |
| 3   | 865.8384    | 45.48            | -4.77       | 40.71           | 46.00          | -5.29       | QP       |             |               |        |



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Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #165

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2402MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Horizontal

Power Source: DC 5V

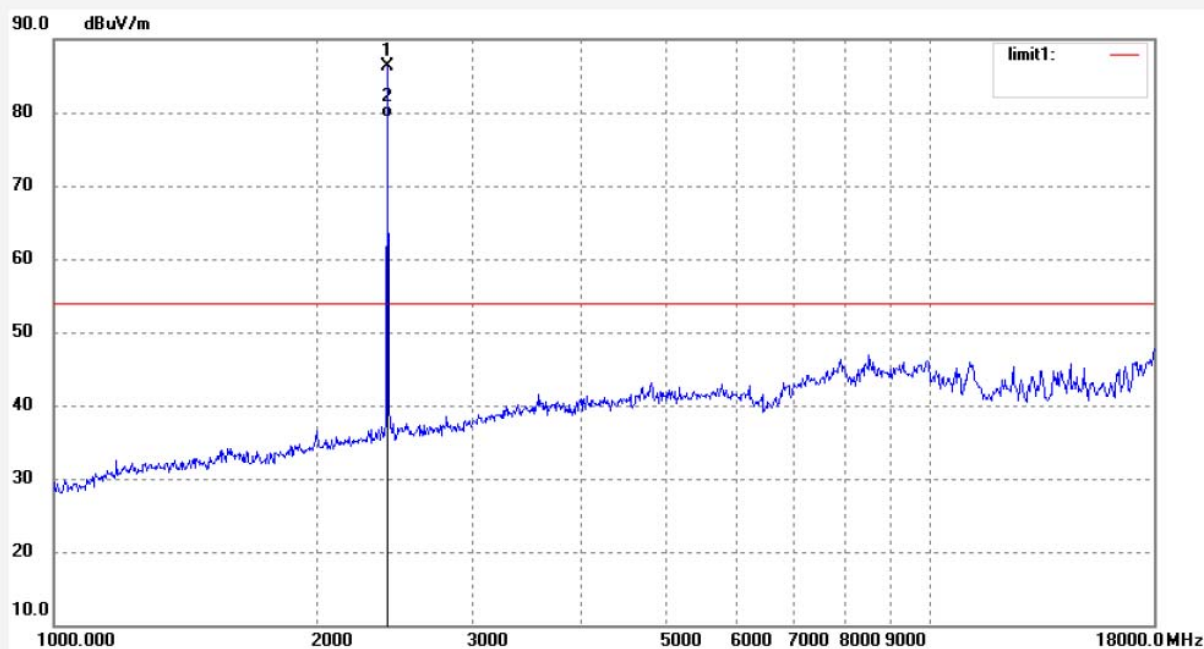
Date: 15/09/24/

Time: 16/39/22

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2402.000    | 94.22            | -7.93       | 86.29           | 114.00         | -27.71      | peak     |             |               |        |
| 2   | 2402.000    | 87.23            | -7.93       | 79.30           | 94.00          | -14.70      | AVG      |             |               |        |



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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #166

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2402MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Vertical

Power Source: DC 5V

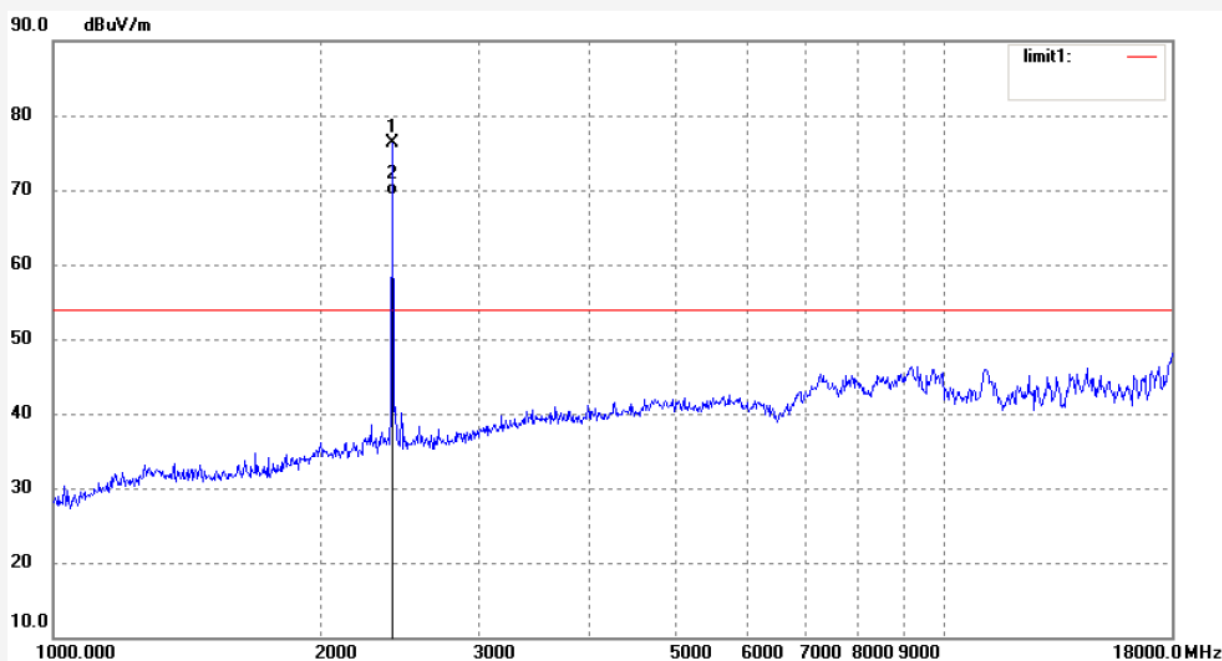
Date: 15/09/24/

Time: 16/41/18

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 2402.000       | 84.16               | -7.93          | 76.23              | 114.00            | -37.77         | peak     |                |                  |        |
| 2   | 2402.000       | 77.23               | -7.93          | 69.30              | 94.00             | -24.70         | AVG      |                |                  |        |



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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #167

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2450MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Horizontal

Power Source: DC 5V

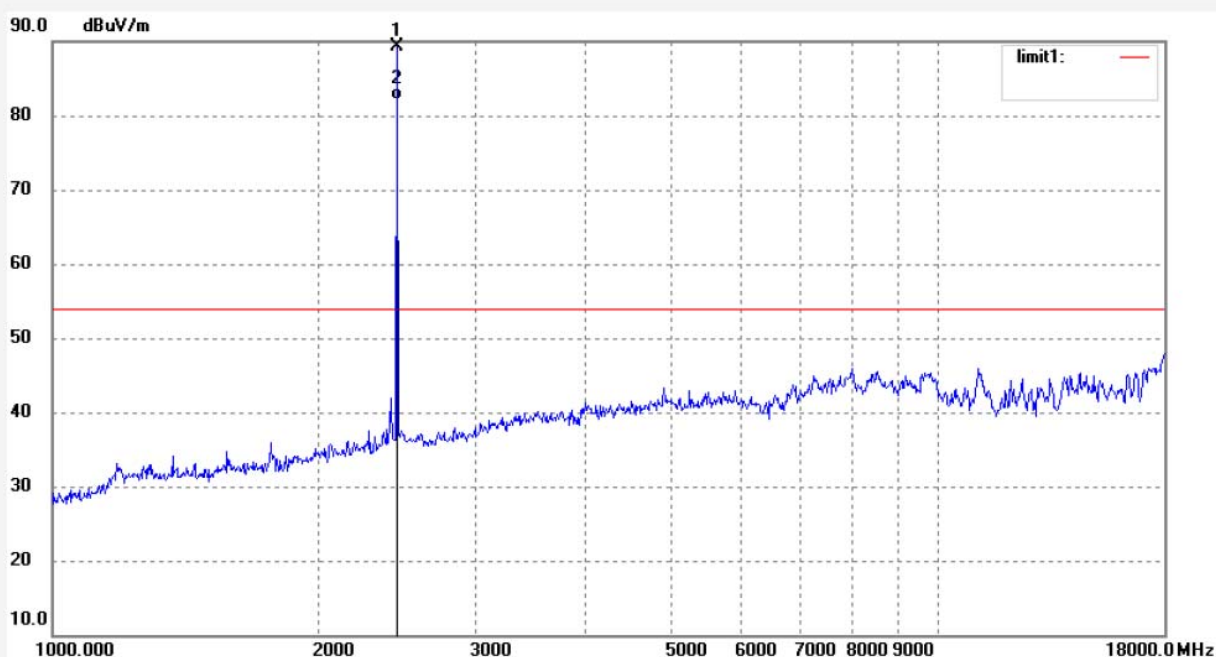
Date: 15/09/24/

Time: 16/43/22

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2450.000    | 97.04            | -7.82       | 89.22           | 114.00         | -24.78      | peak     |             |               |        |
| 2   | 2450.000    | 89.97            | -7.82       | 82.15           | 94.00          | -11.85      | AVG      |             |               |        |

Job No.: ricky2015 #168

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2450MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Vertical

Power Source: DC 5V

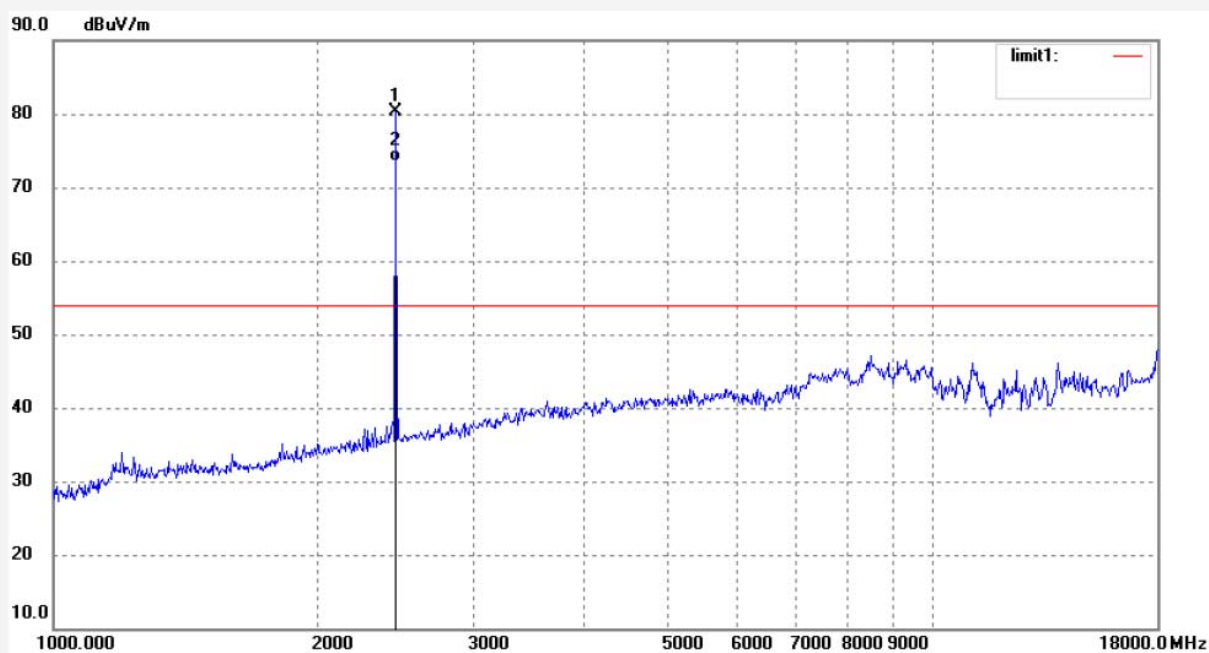
Date: 15/09/24/

Time: 16/45/30

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 2450.000       | 88.09               | -7.82          | 80.27              | 114.00            | -33.73         | peak     |                |                  |        |
| 2   | 2450.000       | 81.25               | -7.82          | 73.43              | 94.00             | -20.57         | AVG      |                |                  |        |



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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #169

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2480MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Vertical

Power Source: DC 5V

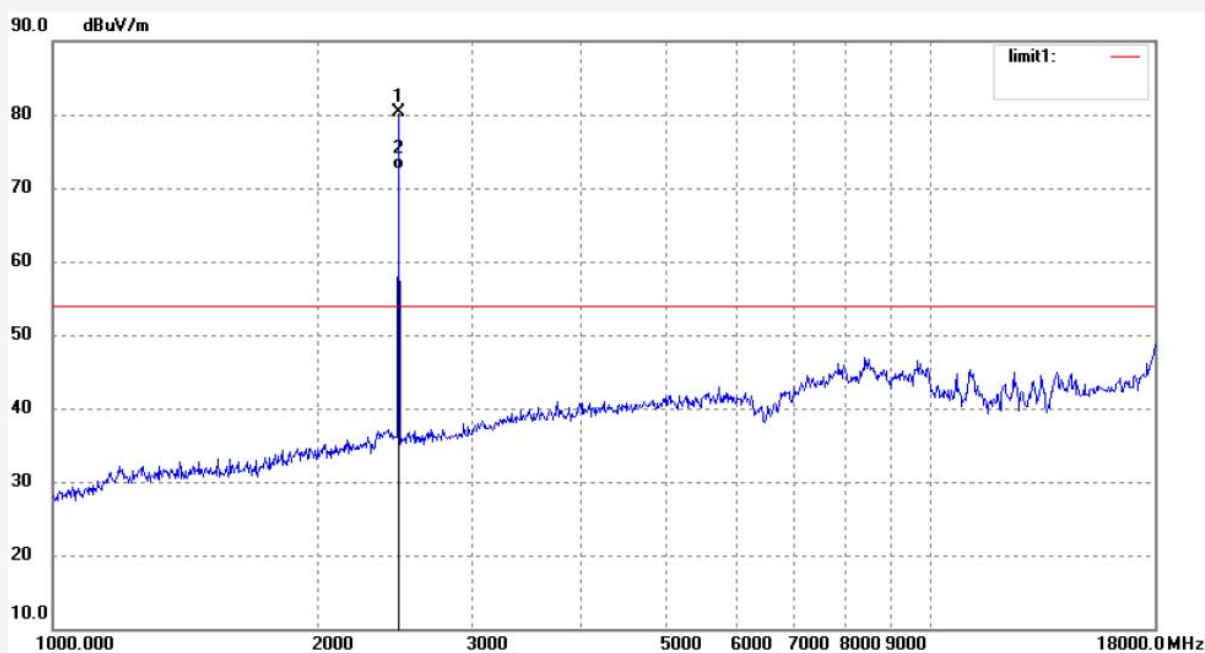
Date: 15/09/24/

Time: 16/47/36

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2480.000    | 88.04            | -7.76       | 80.28           | 114.00         | -33.72      | peak     |             |               |        |
| 2   | 2480.000    | 80.23            | -7.76       | 72.47           | 94.00          | -21.53      | AVG      |             |               |        |



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Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky2015 #170

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: IOLab Dongle

Mode: TX 2480MHz

Model: IOL15B

Manufacturer: C&D

Polarization: Horizontal

Power Source: DC 5V

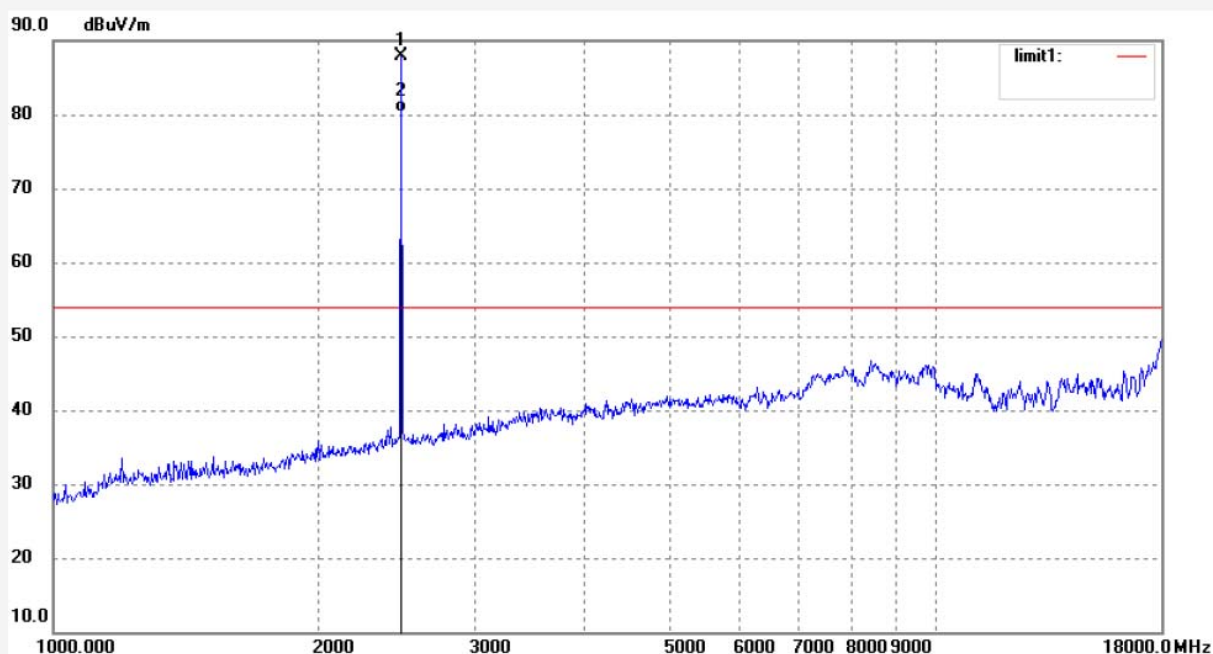
Date: 15/09/24/

Time: 16/49/25

Engineer Signature: Ricky

Distance: 3m

Note: Report NO.:ATE20152072



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 2480.000    | 95.74            | -7.76       | 87.98           | 114.00         | -26.02      | peak     |             |               |        |
| 2   | 2480.000    | 88.02            | -7.76       | 80.26           | 94.00          | -13.74      | AVG      |             |               |        |

## 8. AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207(A)

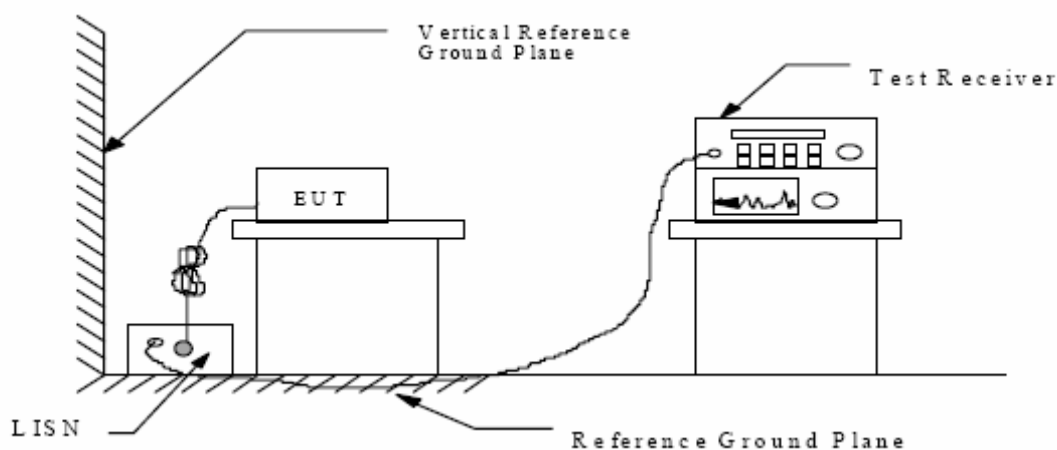
### 8.1. Block Diagram of Test Setup

#### 8.1.1. Block diagram of connection between the EUT and simulators



(EUT: IOLab Dongle)

#### 8.1.2. Shielding Room Test Setup Diagram



(EUT: IOLab Dongle)

### 8.2. The Emission Limit

#### 8.2.1. Conducted Emission Measurement Limits According to Section 15.207(a)

| Frequency<br>(MHz) | Limit dB(μV)     |               |
|--------------------|------------------|---------------|
|                    | Quasi-peak Level | Average Level |
| 0.15 - 0.50        | 66.0 – 56.0 *    | 56.0 – 46.0 * |
| 0.50 - 5.00        | 56.0             | 46.0          |
| 5.00 - 30.00       | 60.0             | 50.0          |

\* Decreases with the logarithm of the frequency.

### 8.3.Configuration of EUT on Measurement

The following equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 8.3.1.IOLab Dongle (EUT)

Model Number : IOL15B  
Serial Number : N/A  
Manufacturer : Shenzhen C&D Electronics Co., Ltd

### 8.4.Operating Condition of EUT

8.4.1.Setup the EUT and simulator as shown as Section 7.1.

8.4.2.Turn on the power of all equipment.

8.4.3. Let the EUT work in On mode measure it.

### 8.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

## 8.6.Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150kHz to 30MHz is checked.

|               |                    |                |              |
|---------------|--------------------|----------------|--------------|
| Date of Test: | September 24, 2015 | Temperature:   | 25°C         |
| EUT:          | IOLab Dongle       | Humidity:      | 50%          |
| Model No.:    | IOL15B             | Power Supply:  | AC 120V/60Hz |
| Test Mode:    | On                 | Test Engineer: | Ricky        |

### MEASUREMENT RESULT: "XH031313\_fin"

2015-9-24 10:48

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 51.10         | 10.3         | 66            | 14.9         | QP       | N    | GND |
| 0.202000         | 43.20         | 10.6         | 64            | 20.3         | QP       | N    | GND |
| 0.536000         | 35.10         | 11.5         | 56            | 20.9         | QP       | N    | GND |

### MEASUREMENT RESULT: "XH031313\_fin2"

2015-9-24 10:48

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 38.40         | 10.3         | 56            | 17.6         | AV       | N    | GND |
| 0.208000         | 31.30         | 10.7         | 53            | 22.0         | AV       | N    | GND |
| 0.524000         | 31.20         | 11.5         | 46            | 14.8         | AV       | N    | GND |

### MEASUREMENT RESULT: "XH031314\_fin"

2015-9-24 10:51

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 50.50         | 10.3         | 66            | 15.5         | QP       | L1   | GND |
| 0.306000         | 32.20         | 11.0         | 60            | 27.9         | QP       | L1   | GND |
| 0.528000         | 34.80         | 11.5         | 56            | 21.2         | QP       | L1   | GND |

### MEASUREMENT RESULT: "XH031314\_fin2"

2015-9-24 10:51

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 37.90         | 10.3         | 56            | 18.1         | AV       | L1   | GND |
| 0.346000         | 32.50         | 11.1         | 49            | 16.6         | AV       | L1   | GND |
| 0.526000         | 30.30         | 11.5         | 46            | 15.7         | AV       | L1   | GND |

|               |                    |                |              |
|---------------|--------------------|----------------|--------------|
| Date of Test: | September 24, 2015 | Temperature:   | 25°C         |
| EUT:          | IOLab Dongle       | Humidity:      | 50%          |
| Model No.:    | IOL15B             | Power Supply:  | AC 240V/60Hz |
| Test Mode:    | On                 | Test Engineer: | Ricky        |

**MEASUREMENT RESULT: "XH031312\_fin"**

| 2015-9-24 10:45  |               |              |               |              |          |      |     |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
| 0.152000         | 49.10         | 10.4         | 66            | 16.8         | QP       | N    | GND |
| 0.348000         | 32.50         | 11.1         | 59            | 26.5         | QP       | N    | GND |
| 0.526000         | 35.50         | 11.5         | 56            | 20.5         | QP       | N    | GND |

**MEASUREMENT RESULT: "XH031312\_fin2"**

| 2015-9-24 10:45  |               |              |               |              |          |      |     |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
| 0.150000         | 37.90         | 10.3         | 56            | 18.1         | AV       | N    | GND |
| 0.346000         | 31.30         | 11.1         | 49            | 17.8         | AV       | N    | GND |
| 0.524000         | 31.30         | 11.5         | 46            | 14.7         | AV       | N    | GND |

**MEASUREMENT RESULT: "XH031311\_fin"**

| 2015-9-24 10:42  |               |              |               |              |          |      |     |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
| 0.150000         | 51.20         | 10.3         | 66            | 14.8         | QP       | L1   | GND |
| 0.172000         | 48.30         | 10.5         | 65            | 16.6         | QP       | L1   | GND |
| 0.532000         | 34.70         | 11.5         | 56            | 21.3         | QP       | L1   | GND |

**MEASUREMENT RESULT: "XH031311\_fin2"**

| 2015-9-24 10:42  |               |              |               |              |          |      |     |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
| 0.150000         | 38.20         | 10.3         | 56            | 17.8         | AV       | L1   | GND |
| 0.346000         | 32.50         | 11.1         | 49            | 16.6         | AV       | L1   | GND |
| 0.530000         | 30.20         | 11.5         | 46            | 15.8         | AV       | L1   | GND |

Emissions attenuated more than 20 dB below the permissible value are not reported.  
The spectral diagrams are attached as below.

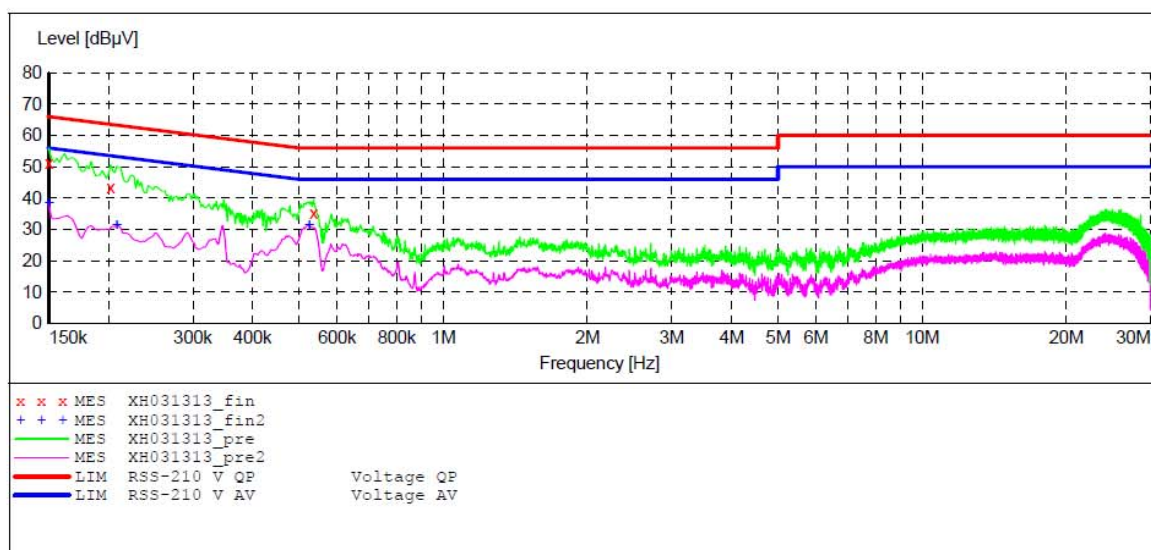
## ACCURATE TECHNOLOGY CO., LTD

### CONDUCTED EMISSION STANDARD FCC 15B

EUT: IOLab Dongle M/N:IOL15B  
 Manufacturer: Shenzhen C&D Electronics Co., Ltd  
 Operating Condition: On  
 Test Site: 2#Shielding Room  
 Operator: Ricky  
 Test Specification: N 120V/60Hz  
 Comment: Report No.:ATE20152072  
 Start of Test: 2015-9-24 / 10:45:50

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)  
 Average



### MEASUREMENT RESULT: "XH031313\_fin"

2015-9-24 10:48

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 51.10         | 10.3         | 66            | 14.9         | QP       | N    | GND |
| 0.202000         | 43.20         | 10.6         | 64            | 20.3         | QP       | N    | GND |
| 0.536000         | 35.10         | 11.5         | 56            | 20.9         | QP       | N    | GND |

### MEASUREMENT RESULT: "XH031313\_fin2"

2015-9-24 10:48

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 38.40         | 10.3         | 56            | 17.6         | AV       | N    | GND |
| 0.208000         | 31.30         | 10.7         | 53            | 22.0         | AV       | N    | GND |
| 0.524000         | 31.20         | 11.5         | 46            | 14.8         | AV       | N    | GND |

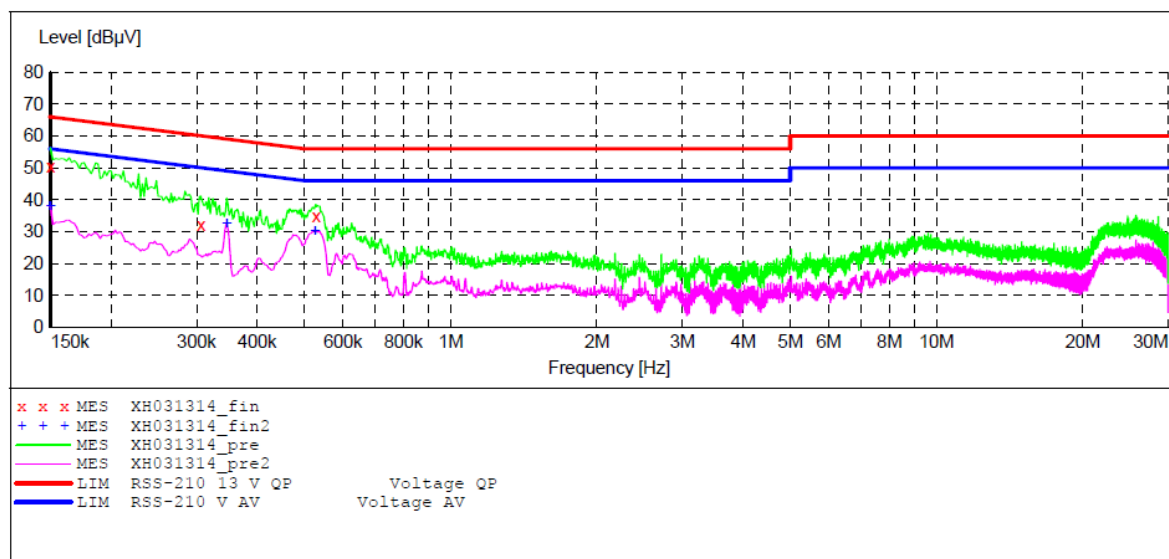
ACCURATE TECHNOLOGY CO.,LTD

## CONDUCTED EMISSION STANDARD FCC 15B

EUT: IOLab Dongle M/N:IOL15B  
 Manufacturer: Shenzhen C&D Electronics Co., Ltd  
 Operating Condition: On  
 Test Site: 2#Shielding Room  
 Operator: Ricky  
 Test Specification: L 120V/60Hz  
 Comment: Report No.:ATE20152072  
 Start of Test: 2015-9-24 / 10:48:41

### SCAN TABLE: "V 150K-30MHZ fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-Z5)  
 Average



### MEASUREMENT RESULT: "XH031314\_fin"

2015-9-24 10:51

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 50.50         | 10.3         | 66            | 15.5         | QP       | L1   | GND |
| 0.306000         | 32.20         | 11.0         | 60            | 27.9         | QP       | L1   | GND |
| 0.528000         | 34.80         | 11.5         | 56            | 21.2         | QP       | L1   | GND |

### MEASUREMENT RESULT: "XH031314\_fin2"

2015-9-24 10:51

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 37.90         | 10.3         | 56            | 18.1         | AV       | L1   | GND |
| 0.346000         | 32.50         | 11.1         | 49            | 16.6         | AV       | L1   | GND |
| 0.526000         | 30.30         | 11.5         | 46            | 15.7         | AV       | L1   | GND |

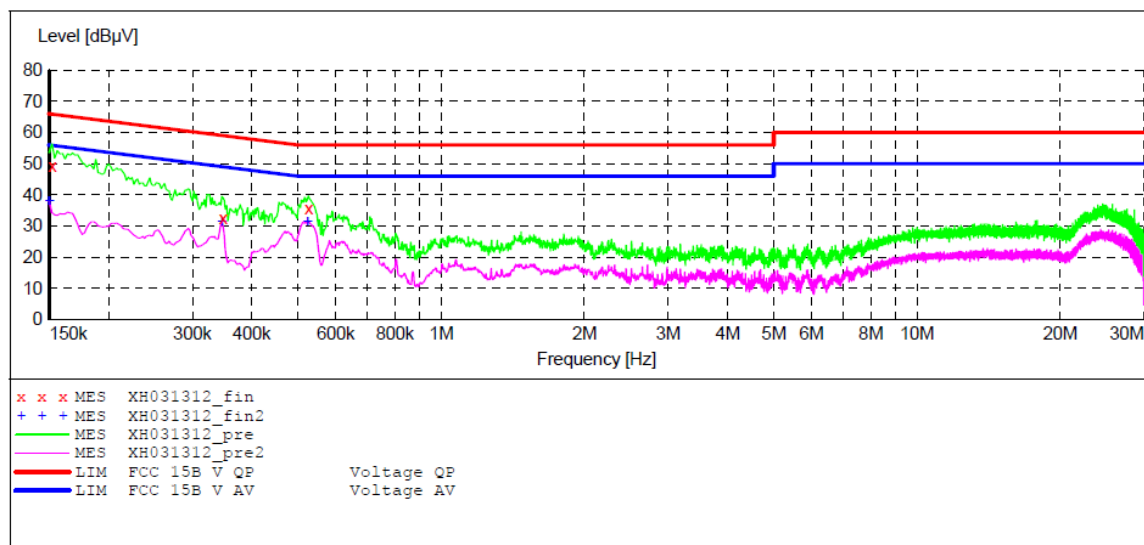
## ACCURATE TECHNOLOGY CO., LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: IOLab Dongle M/N:IOL15B  
 Manufacturer: Shenzhen C&D Electronics Co., Ltd  
 Operating Condition: On  
 Test Site: 2#Shielding Room  
 Operator: Ricky  
 Test Specification: N 240V/60Hz  
 Comment: Report No.:ATE20152072  
 Start of Test: 2015-9-24 / 10:43:06

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)  
 Average



### MEASUREMENT RESULT: "XH031312\_fin"

2015-9-24 10:45

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.152000         | 49.10         | 10.4         | 66            | 16.8         | QP       | N    | GND |
| 0.348000         | 32.50         | 11.1         | 59            | 26.5         | QP       | N    | GND |
| 0.526000         | 35.50         | 11.5         | 56            | 20.5         | QP       | N    | GND |

### MEASUREMENT RESULT: "XH031312\_fin2"

2015-9-24 10:45

| Frequency<br>MHz | Level<br>dBuV | Transd<br>dB | Limit<br>dBuV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 37.90         | 10.3         | 56            | 18.1         | AV       | N    | GND |
| 0.346000         | 31.30         | 11.1         | 49            | 17.8         | AV       | N    | GND |
| 0.524000         | 31.30         | 11.5         | 46            | 14.7         | AV       | N    | GND |

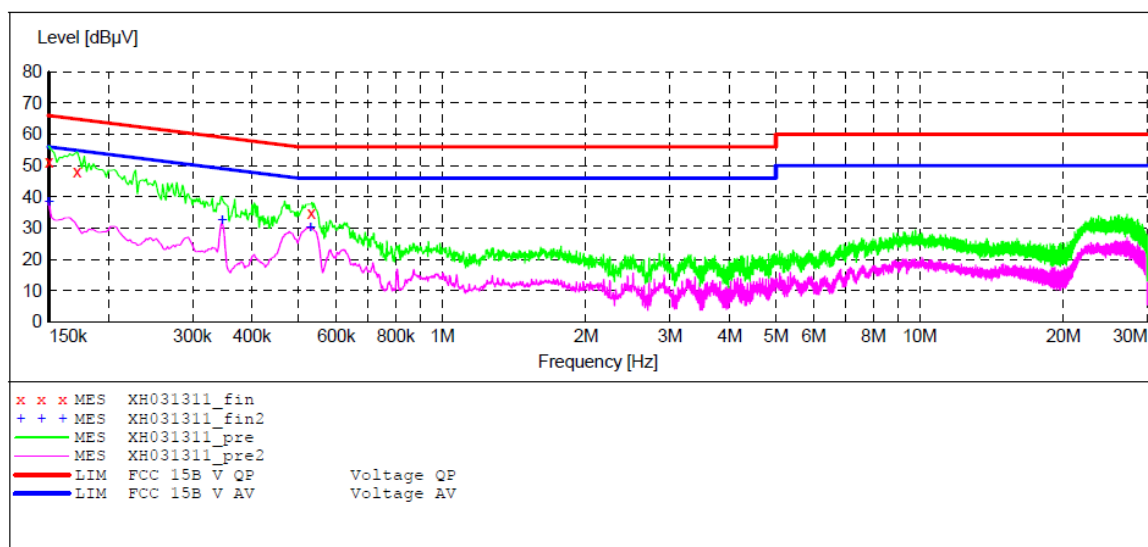
## ACCURATE TECHNOLOGY CO., LTD

### CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: IOLab Dongle M/N:IOL15B  
 Manufacturer: Shenzhen C&D Electronics Co., Ltd  
 Operating Condition: On  
 Test Site: 2#Shielding Room  
 Operator: Ricky  
 Test Specification: L 240V/60Hz  
 Comment: Report No.:ATE20152072  
 Start of Test: 2015-9-24 / 10:40:21

### SCAN TABLE: "V 150K-30MHz fin"

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-Z5)  
 Average



### MEASUREMENT RESULT: "XH031311\_fin"

2015-9-24 10:42

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 51.20         | 10.3         | 66            | 14.8         | QP       | L1   | GND |
| 0.172000         | 48.30         | 10.5         | 65            | 16.6         | QP       | L1   | GND |
| 0.532000         | 34.70         | 11.5         | 56            | 21.3         | QP       | L1   | GND |

### MEASUREMENT RESULT: "XH031311\_fin2"

2015-9-24 10:42

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.150000         | 38.20         | 10.3         | 56            | 17.8         | AV       | L1   | GND |
| 0.346000         | 32.50         | 11.1         | 49            | 16.6         | AV       | L1   | GND |
| 0.530000         | 30.20         | 11.5         | 46            | 15.8         | AV       | L1   | GND |

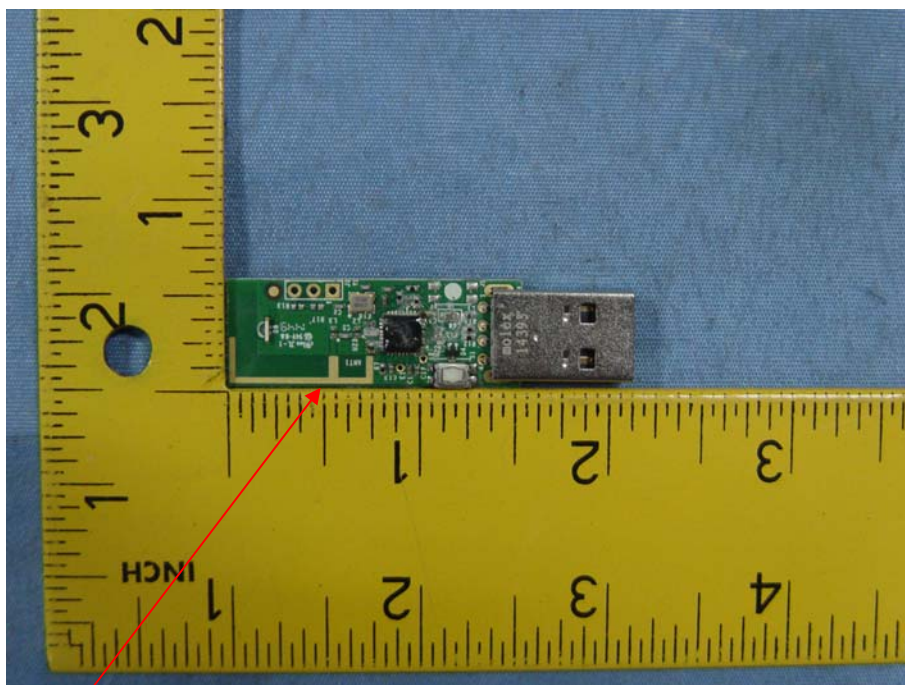
## 9. ANTENNA REQUIREMENT

### 9.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### 9.2.Antenna Construction

Device is equipped with Integral antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



**Antenna**